WHITE PAPER

Date January 1997

Prepared by Compaq
Windows NT Integration

Compaq Computer
Corporation

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Migrating to the Compaq ProLiant 5000 Server in Microsoft Windows NT Server, version 3.51 Environments

This document provides system engineers and administrators with tested server information to migrate successfully to a Compaq ProLiant 5000 Server environment. The information focuses on customer configurations running Microsoft Windows NT Server 3.51 on Compaq ProLiant Servers.

Beta versions of Microsoft Windows NT Server are not supported as a migration platform. See the Compaq White Paper "Migrating to the Compaq ProLiant 5000 Server in Microsoft Windows NT Server, version 4.0 Environments" *for information on migrating to the ProLiant 5000 Server in Windows NT Server 4.0 environments.*

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Migrating to the Compaq ProLiant 5000 Server in Microsoft Windows NT Server, version 3.51 Environments

Second Edition (January 1997)
Document Number 480A/0197

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INTRODUCTION

The ProLiant 5000 Server is a high-end member of the Compaq Server Line. Its architecture is significantly different from that of the Compaq ProLiant 4500 Server. The ProLiant 5000 Server is designed to exploit the performance advantages and unique characteristics of Pentium Pro processors. In addition, the ProLiant 5000 Server has the latest in high-performance options.

This White Paper presents several migration scenarios which are based on configurations tested in the Compaq Integration Test Lab. This document addresses potential issues with common configurations of ProLiant Servers migrating to similar configurations of the ProLiant 5000 Server.

To validate the success of each migration scenario, the Netbench suite of tests were executed before and after each migration. However, this document does not focus on nor discuss performance results, but rather the considerations associated with a successful migration.

Additional Resources

See the Compaq White Paper *Migrating to the Compaq ProLiant 5000 Server in Microsoft Windows NT Server, version 4.0 Environments* for information on migrating to the ProLiant 5000 Server in Windows NT Server 4.0 environments.

If you are installing a new server, the Compaq White Paper, *Configuring the Compaq ProLiant 5000 for Microsoft Windows NT Server Environments,* provides detailed information on proper hardware and software configuration.

To obtain peak performance from your ProLiant 5000 Server, it must be properly configured with the appropriate options. Before configuring your server, read the Compaq Technology Brief, *Configuring the Compaq ProLiant 5000 Server for Peak Performance,* for detailed architectural and configuration information.

For more information about Compaq software which provides high network availability, see the Compaq White Paper, *Compaq Advanced Network Error Correction Support in a Microsoft Windows NT Server Environment.*

You can find the above documents, plus many other helpful documents, on the Compaq World Wide Web site at:

http://www.compaq.com/solutions/frontline/winnt/info_lib/index.html

Getting Started

Before migrating to a new platform, complete a thorough planning session to understand possible considerations and anticipate unexpected issues. Be sure to have a backup plan so you can return to your original configuration in the event of an unexpected issue.

To assist with this migration, the following checklist identifies incompatible items that require updating and compatible items that have optional updates available.

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TABLE 1
MIGRATION CHECKLIST

Description	Requires Update	Update Available	Comments
Windows NT Server 3.51	Optional	Service Pack 1-4	Service Packs 1-4 are supported
Windows NT SSD, version 1.17 and earlier	Yes	Windows NT SSD, version 1.18 or later	Updated HAL and drivers required
SMART Controller	Optional	SMART-2/P Controller	The ProLiant 5000 Server is optimized for PCI Drive Array Controllers
SMART-2/P Controller with Windows NT SSD, version 1.17	Yes	Windows NT SSD, version 1.18 or later	Updated driver required if upgrading from Windows NT SSD, version 1.17 or earlier
Compaq SCSI-2 Hard Drives (Hot Pluggable)	Optional	Compaq SCSI-2 Fast-Wide Hard Drives (Hot Pluggable)	Use Compaq SCSI-2 Fast-Wide Hard Drives for increased performance
Compaq SIMM memory options	Yes	Compaq DIMM memory options	SIMM memory options are not compatible
NetFlex, NetFlex-2, and NetFlex-3/E family of network controllers	Optional	NetFlex-3/P and Netelligent PCI network controllers	The ProLiant 5000 Server is optimized for PCI network controllers
NetFlex-3/P network controller and Windows NT SSD, version 1.17	Yes	Windows NT SSD, version 1.18 or greater	Updated driver required
ProLiant 1500, 2000, 4000 and 4500 processor board options	Yes	ProLiant 5000 Server processor board options	ProLiant 5000 Server requires Pentium Pro processor board options
Compaq Tape Drive options	No	N/A	All Compaq tape drive options are supported

The check list shown in Table 1 should not be considered complete - individual configurations can vary. Network servers based on multiprocessing operating systems like Windows NT Server 3.51 are extremely complex. The migration scenarios illustrated in this document should be used as examples only. Your configuration and results can vary.

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MIGRATION SCENARIOS

Many migration scenarios were successfully tested in the Compaq Integration Test Lab. To illustrate the broadest range of possible migration scenarios, four migration scenarios based on the ProLiant 4500 Server were selected for this document. Although your exact configuration might not be included, the information provided is applicable to all ProLiant Servers and addresses all known issues with migrating from previous models and options to the ProLiant 5000 Server.

Migration Scenario 1

Table 2 illustrates a migration scenario that utilizes as many of the options in the ProLiant 4500 Server as possible. This configuration is not optimized for best performance, but it results in a successful migration with improved processor performance. The options that can be upgraded for optimum performance are identified for upgrading at a later time.

TABLE 2
COMPAQ PROLIANT 5000 SERVER MIGRATION
SCENARIO 1

Hardware and Software	ProLiant 4500 Server	ProLiant 5000 Server
System Processor(s)	2 X 133-MHz Pentium	2 X 166-MHz Pentium Pro
Memory	64 MB (SIMM)	64 MB (DIMM)
Disk Controller	SMART Controller	SMART Controller
File System(s)	500-MB FAT(boot), 5.5-GB NTFS	500-MB FAT(boot), 5.5-GB NTFS
Network Controller	NetFlex-3 100VG/E	NetFlex-3 100VG/E
Operating System	Windows NT Server Version 3.51	Windows NT Server Version 3.51
Software	Windows NT SSD 3.5x, Version 1.16 and Compaq Insight Management Agents Version 2.61	Windows NT SSD 3.5x, Version 1.18 and Compaq Insight Management Agents Version 3.00

The following items from the checklist in the "Getting Started" section were isolated for consideration in this migration scenario:

- Hardware Abstraction Layer (HAL) requires upgrade
- ProLiant 4500 Server system processor options are not compatible with the ProLiant 5000 Server
- ProLiant 4500 Server memory options are not compatible with the ProLiant 5000 Server
- System Configuration, Diagnostics, and Windows NT SSD require updates
- SMART Controller and NetFlex-3/E Controller can be upgraded to PCI for optimum performance but are compatible

The HAL compatibility is a significant issue; the server cannot initialize without it. Because HAL compatibility is an issue in all of the migration scenarios in this document, see the section in this document called "Step-by-Step Instructions" for more information.

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Processor and memory incompatibility are issues addressed during the planning that occurs before a purchase is made. In most cases, there is a plan for the continued use of the old hardware. The information is provided here to assist with the planning stage.

While the SMART Controller and NetFlex-3 Controller in this configuration are compatible, they cannot take advantage of the advanced architecture of the ProLiant 5000 Server. Newer versions of these controllers that are designed to take full advantage of the advanced architecture of the ProLiant 5000 Server are available and should be considered for a future upgrade.

As indicated in the check list, driver upgrades are *not* necessary for the SMART Controller and NetFlex-3 Controller to function in the new configuration. All of the drivers and HALs to support the hardware are located on the Windows NT SSD. To achieve HAL compatibility you must upgrade to the Windows NT SSD, version 1.18 or later. Update all of the drivers and the HAL automatically by using the Express Setup option on the Windows NT SSD, version 1.18 or later.

The ProLiant 5000 Server requires updated versions of the System Configuration and Diagnostics utilities that are located on the system partition of the boot disk. The version of the Compaq Support Software CD that ships with your new systems includes the correct versions of these utilities, as well as the Windows NT SSD, version 1.18 or later. Follow the detailed instructions for updating the system partition utilities in the "Step-by-Step Instructions" section of this document.

Migration Scenario 2

The following migration scenario introduces Microsoft Service Pack 3 for Windows NT Server 3.51, 200-MHz Pentium Pro processors, an upgrade to PCI for the drive array controller, and 100TX LAN topology. The remaining items are the same as Migration Scenario 1. This configuration is better optimized for performance than the configuration illustrated in Migration Scenario 1.

TABLE 3
COMPAQ PROLIANT 5000 SERVER MIGRATION
SCENARIO 2

Hardware and Software	ProLiant 4500 Server	ProLiant 5000 Server
System Processor(s)	2 X 133-MHz Pentium	2 X 200-MHz Pentium Pro
Memory	64 MB (SIMM)	64 MB (DIMM)
Disk Controller	SMART Controller	SMART-2 /P Controller
Drive Configuration	4 X 2.1 GB (RAID 5)	4 X 2.1 GB (RAID 5)
File System(s)	500-MB FAT(boot), 5.5-GB NTFS	500-MB FAT(boot), 5.5-GB NTFS
Network Controller	NetFlex-3 10/100TX/E	NetFlex-3 10/100TX/E
Operating System	Windows NT Server 3.51 + Service Pack 3	Windows NT Server 3.51 + Service Pack 3
Software	Windows NT SSD, version 1.16 and Compaq Insight Management Agents, version 2.61	Windows NT SSD, version 1.18 and Compaq Insight Management Agents, version 3.00 or later

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The following items from the check list in the "Getting Started" section were identified for consideration in this migration scenario:

- HAL requires upgrade
- SMART-2/P driver upgrade required
- ProLiant 4500 Server system processor options are not compatible with the ProLiant 5000 Server
- ProLiant 4500 Server memory options are not compatible with the ProLiant 5000 Server
- System Configuration, Diagnostics, and Windows NT SSD require updates
- NetFlex-3/E Controller can be upgraded to PCI for performance improvement

As with all the configurations in this document, you must upgrade the HAL. Failure to upgrade the HAL results in a blue screen trap during server initialization. Detailed instructions for upgrading the HAL are included in the "Step-by-Step Instructions" section of this document.

If you are in the planning stage of a migration, note that the processor and memory options from the ProLiant 4500 Server are *not* compatible with the ProLiant 5000 Server.

The device driver for the SMART Controller installed in the ProLiant 4500 Server requires an update to support the SMART-2/P Controller planned for the ProLiant 5000 Server.

CAUTION: You must use the correct driver for the SMART-2/P Controller for the system to initialize.

Fortunately, this is an easy issue to solve because the updated driver is backward compatible with the SMART Controller. To resolve this, apply the Windows NT SSD, version 1.18 or greater prior to moving the controller and drive subsystem to the new platform. Detailed instructions for this process are included in the "Step-by-Step Instructions" section of this document.

The NetFlex-3/E Controller in this configuration is compatible but does not utilize the high-performance PCI architecture in the ProLiant 5000 Server. To take advantage of the PCI architecture in the ProLiant 5000 Server, you must install the updated version of this controller. Even though the existing controller device driver is compatible, you should upgrade it at the same time as the HAL.

Detailed instructions for updating the system partition utilities (System Configuration, Diagnostics, Drive Array Configuration, and so on) can be found in the "Step-by-Step Instructions" section of this document.

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Migration Scenario 3

The additional processors, Service Pack 4, and additional memory in the following migration scenario will not require changes to the procedures used to migrate scenario 2 stated earlier. However, by starting with a SMART-2 /E Controller in the ProLiant 4500 Server you can save the process of updating the driver before migration.

TABLE 4
COMPAQ PROLIANT 5000 SERVER MIGRATION
SCENARIO 3

Hardware and Software	ProLiant 4500 Server	ProLiant 5000 Server
System Processor(s)	4 X 133-MHz Pentium	4 X 166-MHz Pentium Pro
Memory	128 MB (SIMM)	128 MB (DIMM)
Disk Controller	SMART-2/E Controller	SMART-2/P Controller
Drive Configuration	4 X 2.1 GB (RAID 5)	4 X 2.1 GB (RAID 5)
File System(s)	500-MB FAT(boot), 5.5-GB NTFS	500-MB FAT(boot), 5.5-GB NTFS
Network Controller	NetFlex-3 10/100TX/E	NetFlex-3 10/100TX/E
Software	Windows NT SSD, version 1.17 and Compaq Insight Management Agents, version 2.61	Windows NT SSD, version 1.18 and Compaq Insight Management Agents, version 3.00 or later

The following items from the checklist in the "Getting Started" section were isolated for consideration in this migration scenario:

- HAL update required
- ProLiant 4500 Server system processor options are not compatible with the ProLiant 5000 Server
- ProLiant 4500 Server memory options are not compatible with the ProLiant 5000 Server
- NetFlex-3/E Controller can be upgraded to PCI for performance improvement
- System Configuration, Diagnostics, and Windows NT SSD require update

For this migration scenario, as with migration scenarios 1 and 2, the HAL and system partition utilities (System Configuration, Diagnostics, and so on) require updates. Procedures for accomplishing these tasks can be found in the "Step-by-Step Instructions" section of this document.

As is the case with all the migration scenarios presented in this document, the memory and processor options are not compatible. The Compaq Technology Brief, *Configuring the Compaq ProLiant 5000 for Peak Performance* (document number 301A/0696) provides additional information on this subject.

The NetFlex-3/E Controller in this configuration is compatible but does not utilize the high-performance PCI architecture in the ProLiant 5000 Server. To take advantage of the PCI architecture in the ProLiant 5000 Server, you must install the updated version of this controller. Even though the existing controller device driver is compatible, you should upgrade it at the same time as the HAL.

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Migration Scenario 4

The migration scenario that follows takes full advantage of the advanced architecture in the ProLiant 5000 Server. The table below illustrates the hardware and software components used in this migration scenario.

TABLE 5
COMPAQ PROLIANT 5000 SERVER MIGRATION SCENARIO 4

Hardware and Software	ProLiant 4500 Server	ProLiant 5000 Server
System Processor(s)	4 X 133-MHz Pentium	4 X 200-MHz Pentium Pro
Memory	128 MB (SIMM)	128 MB (DIMM)
Disk Controller	SMART Controller	SMART-2/P Controller
Drive Configuration	4 X 2.1 GB (RAID 5)	4 X 2.1 GB (RAID 5)
File System(s)	500-MB FAT(boot), 5.5-GB NTFS	500-MB FAT(boot), 5.5-GB NTFS
Network Controller	NetFlex-3 10/100TX/E	NetFlex-3 10/100TX/P
Software	Windows NT SSD, version 1.16 and Compaq Insight Management Agents, version 2.61	Windows NT SSD, version 1.18 and Compaq Insight Management Agents, version 3.00 or later

The following items in this migration scenario require attention during the migration process.

- HAL requires upgrade
- Memory and processor options are not compatible
- SMART-2/P Drive Array Controller driver upgrade required
- NetFlex-3/P Controller - instance re-creation required
- System Configuration, Diagnostics, and Windows NT SSD require updates

Carefully follow the HAL upgrade procedures in the "Step-by-Step Instructions" section of this document. Failure to update the HAL correctly can prevent the system from initializing.

The SMART Controller driver from the Windows NT SSD version 1.16 installed in the ProLiant 4500 Server is not compatible with the SMART-2/P Controller planned for the upgraded system.

CAUTION: You must use the correct driver for the SMART-2/P Controller for the system to initialize.

Apply the Windows NT SSD, version 1.18 or later prior to moving the controller and drive subsystem to the new platform. Detailed instructions for this process are included in the "Step-by-Step Instructions" section of this document.

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The NetFlex-3 Controller configuration information stored in the registry from the ProLiant 4500 Server installation requires replacement when the new NetFlex-3 /P Controller is installed in the ProLiant 5000 Server. Deleting and reinstalling the controller instance is a simple procedure that resolves this issue. Detailed instructions are available for this procedure in the "Step-by-Step Instructions" section of this document.

To update the system partition utilities (System Configuration, Diagnostics, and so on), follow the detailed instructions in the "Step-by-Step Instructions" section of this document.

STEP-BY-STEP INSTRUCTIONS

This section provides basic step-by-step instructions for migrating the scenarios described earlier in this document. Detailed instructions for performing many of the tasks listed in previous sections, such as updating the HAL, using the system partition utilities, and deleting and reinstalling a NetFlex-3 Controller instance are also included here.

Step 1: Backup the System

You must first perform a complete backup of your system and verify it. Follow the instructions included with your backup software to enable the *Verify After Backup* option. This ensures that you can return to the starting point with all of your data if a problem arises.

After the backup is complete, update your Emergency Repair Disk or create a new one. You will need this if you have to restore your complete system. The Repair Disk Utility accomplishes this task. Follow these steps:

1. From a command prompt, type

   RDISK
   then press the **Enter** key.

2. Select *Create Repair Disk* to create a new repair disk, or select *Update Repair Info* to update an existing repair disk.

3. Follow the instructions given to complete the task.

Step 2: Update the System Partition

Your upgraded system requires an updated version of System Configuration and other utilities stored in the system partition of your hard disk. To ensure that the correct versions are available to your new system, follow the instructions below to update the utilities with the version provided with the new server.

1. Shutdown the server and place the Compaq Software Support CD shipped with your new server in the CD-ROM drive of your existing server and reboot.

2. Select *Upgrade System Partition*.

3. Check System Configuration, Diagnostics, Drive Array Configuration, and so on.

4. When the update is complete, select *Exit from this utility*.

5. Reboot the server.

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Step 3: Update the Windows NT SSD

Complete this step while the original system is still functional and before the HAL is updated for the new system. If you are migrating to the SMART-2 /P Controller, you must use the Windows NT SSD, version 1.18 or later for the SMART-2 Controller to function properly in the new system.

You can build an updated version of the Windows NT SSD from the Software Support CD shipped with your new server by following these steps:

1. Insert the Compaq Support Software CD in the CD-ROM drive.
2. Select *File→Run* from the Windows Program Manager.
3. Enter:

   <drive>:\WINDOWS\PB.EXE

   where <drive> is the drive letter of your CD-ROM drive.
4. Select *Toolbox* from the Product Builder Main Menu.
5. Select the *Microsoft Products* category from the Select a Product Category screen.
6. Select *Compaq Support Software for Windows NT* from the Select a Product screen. Information on the products version and space requirements can be viewed on the screen.
7. Select a product, then choose the *Build* button, or double-click on a product in the list box. From the Destination and Key Entry screen you can specify the destination drive and directory for the product.
8. Specify a destination path, then select *Continue* to begin the copy process.

After you create the latest version of the Windows NT SSD, you must upgrade your system with all the new drivers. Follow these steps:

1. Insert the Windows NT SSD (Diskette # 1) into the diskette drive.
2. Select *File→Run* from Program Manager.
3. Enter the following:

   A:\setup

   where A: is the letter of the diskette drive.
4. Select the *Express* button and then the *Update* button.
5. Follow the instructions to update all drivers.
6. Remove the Windows NT SSD diskette and restart the computer to enable the drivers.

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Step 4: Downgrade the HAL

The ProLiant 4500 Server requires the Compaq Systempro HAL for multiprocessing in a Windows NT Server environment and the ProLiant 5000 requires the Compaq MPS HAL. Neither system initializes without the correct HAL. To facilitate the upgrade, you must install the correct HAL for the ProLiant 5000 Server while the ProLiant 4500 Server is still functional.

The Windows NT SSD detects and installs the appropriate HAL during the installation process. To accomplish the migration safely, you must downgrade the system to a uniprocessor HAL and kernel, which can be run on both systems, before moving to the ProLiant 5000 Server. After successfully migrating all options, you must upgrade the system to a multiprocessor HAL and kernel.

The Compaq SSD Setup Utility performs downgrades and upgrades for you. You need the Windows NT Server and Service Pack media to accomplish the procedure that follows.

CAUTION: If the boot partition is formatted as NTFS, there is no easy recovery if the incorrect HAL is installed. Therefore, be careful with your selections.

With Windows NT Server running on the ProLiant 4500 Server, follow these instructions to downgrade to a uniprocessor HAL:

1. Insert the Windows NT SSD (Diskette # 1) into the diskette drive.
2. Select *File→Run* form Program Manager.
3. Enter the following:

   A:\setup

   where A: is the letter of the diskette drive.
4. Select *Custom* from the Setup Installations Options Menu.
5. Select the *HAL* tab from the Setup - Custom Installation Menu.
6. Select the *Convert to uniprocessor HAL* check box.
7. Insert the Windows NT Server CD in the CD-ROM drive. Select the *Downgrade* button. Follow the instructions provided.

   NOTE: Depending on your configuration, you might be prompted for Windows NT Service Pack file locations. Be prepared by having these files ready.
8. Remove the Windows NT SSD diskette and restart the server to enable the new HAL.

To verify that the correct HAL was successfully installed, observe the blue server initialization screen. A brief message displays to indicate that the Windows NT uniprocessor kernel and the Compaq uniprocessor HAL are initializing.

NOTE: The initialization message should indicate that only one system processor is initializing. This is correct for the uniprocessor configuration, even though there is more than one processor installed in the system.

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Step 5: Configure the New System

To configure the new system, follow these steps:

1. Turn off the power to both the new and old systems.
2. Remove the access covers and prepare to move the drive subsystem and other peripherals to the new system. Because the exact task depends on what options are migrated to the new system, follow the instructions included with each option that you are migrating.

   The following suggestions and warnings might save you some time:

   - Take precautions against electrostatic discharge.
   - Number the front of the drives before you remove them from the cabinet to make sure they remain in the same order during the migration.
   - If you are migrating an array controller to the ProLiant 5000 Server for drives installed in the front hot plug bays of the server, relocate the narrow SCSI cable from the top of the hot plug drive bay to the narrow SCSI connector on the system I/O board. This is located just above the wide SCSI cable that is connected to the hot plug drive bays from the factory. This narrow cable feeds the CD-ROM drive and any tape drive you might have installed.

   CAUTION: You must reinstall hot plug drives in the exact order to preserve the array configuration during migration. Failure to due so can result in the loss of all data.

3. After all the options are installed, power up the system with the Compaq Support Software CD in the CD-ROM drive to configure the hardware. If you are migrating a SMART Controller or a SMART-2 Controller, the system cannot access the system partition of the hard drive until after the array is configured.
4. For systems with SMART-2 Controllers, you must boot from the Compaq Support Software CD again and select *Configure Drive Array*. The SMART-2 Controllers recognize the last known configuration of the array and list it as the default configuration. Accept the configuration without change and save it.

   CAUTION: Any modification to the array configuration that differs from your previous configuration results in the loss of all data.

5. After completing the above migration, remove the Compaq Software Support CD and restart the server to enable the configuration.

Step 6: Reinstall the NetFlex-3 Controller

When changing from a NetFlex-3/E to a NetFlex-3/P Controller, you must delete and reinstall the controller for it to function properly. For more information on configuring the NetFlex-3/P Controller, see the Compaq White Paper, *Compaq Advanced Network Error Correction Support in a Microsoft Windows NT Server Environment* (document number 353A/0696). After the new system starts, follow these steps:

1. Select *Control Panel→Network* from the Main program group to start the Network Settings dialog box.
2. Highlight each protocol, select *Configure*, and write down all configuration details.

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CAUTION: Failure to record and restore all protocol settings accurately can result in a network communication failure of the new server.

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3. Select the *NetFlex-3 Controller* from the Installed Adapter Cards window.
4. Select the *Remove* button and confirm the operation.
5. Select on *Close* and then *Restart.*
6. Return to the Network Settings dialog box after the server restarts.
7. Select *Add Adapter.*
8. Select *COMPAQ NetFlex-3 EISA/PCI.*
9. Insert the Windows NT SSD (diskette # 1) in drive A when prompted for the path of the distribution files, and type

   a:\net\netflx3 <Enter>
10. The Advanced Network Control Utility automatically runs. Highlight the NetFlex-3 Controller and select the *Install* button.
11. Select *Close* and fill in the appropriate protocol information recorded in Step 2.
12. Select *Restart System.* The system should start and be fully operational.

    NOTE: For additional information on configuring the advanced fault tolerance features of the Advanced Network Control Utility, read the Compaq White Paper, *Compaq Advanced Network Error Correction Support in a Microsoft Windows NT Server Environment.*

Step 7: Upgrade the HAL

After the ProLiant 5000 Server is fully configured and you verify that it is functioning properly, you must upgrade the HAL and kernel to the multiprocessing versions. The Compaq SSD Setup Utility performs the upgrade to the multiprocessor HAL. You need the Windows NT Server and Service Pack media to accomplish the procedure that follows.

CAUTION: If the boot partition is formatted as NTFS, there is no easy recovery if the incorrect HAL is installed. Therefore, be careful with your selections.

With Windows NT Server running on the ProLiant 5000 Server, follow these steps:

1. Insert the Windows NT SSD (Diskette # 1) into the diskette drive.
2. Select *File→Run* from Program Manager.
3. Enter the following:

   A:\setup

   where A: is the letter of the diskette drive.
4. Select *Custom* from the Setup Installations Options Menu.
5. Select the *HAL* tab from the Setup - Custom Installation menu.
6. Select the *Upgrade to multiprocessor HAL* check box.

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7. Insert the Windows NT Server CD in the CD-ROM drive. Select the *Upgrade* button. Follow the instructions provided.

   NOTE: Depending on your configuration, you might be prompted for Windows NT Service Pack file locations. Be prepared by having these files ready.

8. Remove the Windows NT SSD diskette from the drive and restart the server.

To verify that the correct HAL was successfully installed, observe the blue server initialization screen. A brief message displays to indicate that the Windows NT multiprocessor kernel and the Compaq multiprocessor HAL are initializing.

Summary

After following the steps outlined in this document, your ProLiant 5000 Server should be fully configured, with an upgraded HAL and kernel. For more information on installing a new server, obtaining peak performance from you ProLiant 5000 Server, or increasing network availability, see the section, "Additional Resources" on page 3.

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Instalación colgada

Cuando se instala la unidad en el baúl, debajo de la bandeja para paquetes, tenga en cuenta los siguientes puntos.

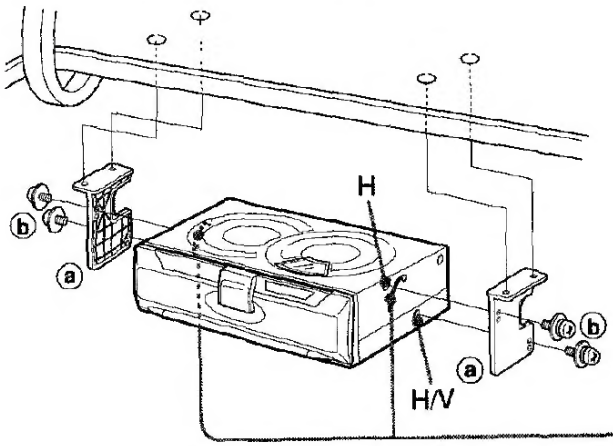
- Seleccione cuidadosamente el lugar donde se va a instalar la unidad, para que no impida el movimiento de las barras de soporte de la tapa del baúl.

Precaución

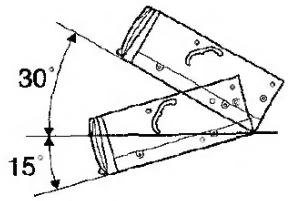
Verifique que no haya nada detrás del lugar de la instalación antes de abrir los orificios.

1 Diseño

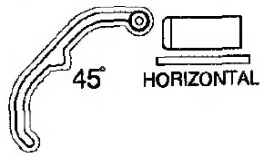
Para más detalles de ⓐⓑⓒ..., lea la pagina 3.



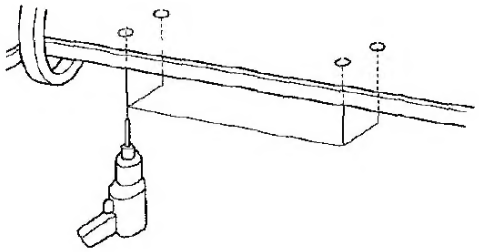
Angulo efectivo del aparato.



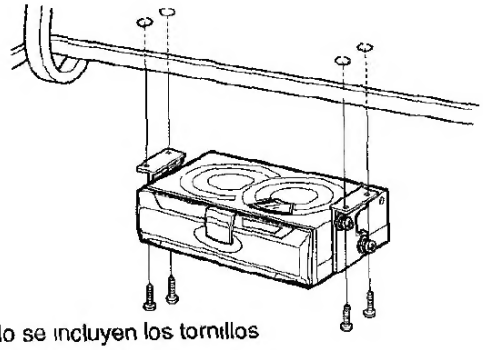
Posición del ojete protector.



2 Abra orificios

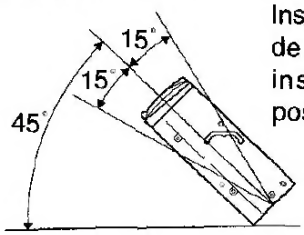


3 Fin



No se incluyen los tornillos auto-roscadores.

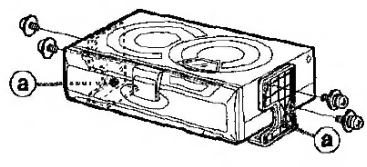
Instalación inclinada



Instale los herrajes de ángulo para la instalación a la posición de 45°.

Nota sobre las ménsulas ⓐ

Para ahorrar espacio al instalar, puede colocar las ménsulas ⓐ de adentro hacia afuera como en la figura a continuación.



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